

I'm not robot!



Title: Angles  
Objective: Solve missing angle problems involving triangles, quadrilaterals angles around a point and angles on a straight line

**Fluency**  
Find the missing angles in each diagram.

**Misconception**  
Tom says the missing angle is  $67^\circ$ . Do you agree with Tom. Explain why?

**Application**  
Find the angles marked with letter in this quadrilateral

**Problem solving**  
An isosceles triangle has an angle of  $36^\circ$ . What sizes could the other two angles be?

**Reasoning**  
Is the following statement always true, sometimes true, or never true? Explain your answer.  
 $a + b = 180^\circ$

**Unit 7 Test Study Guide (Polygons & Quadrilaterals)**  
Name: Key  
Date: \_\_\_\_\_ Block: \_\_\_\_\_

**Topic 1: Interior Angles of Polygons**

- What is the formula for the sum of the interior angles of a polygon?  
 $S = (n-2) \cdot 180$
- What is the formula to find the measure of each interior angle of a regular polygon?  
 $n \cdot x = S/n$
- Find the sum of the interior angles of a 35-gon.  
 $S = (35-2) \cdot 180$   
 $S = 5940^\circ$
- Six angles of a heptagon measure  $107^\circ$ ,  $139^\circ$ ,  $131^\circ$ ,  $112^\circ$ ,  $145^\circ$ , and  $128^\circ$ . What is the measure of the seventh angle?  
( $S = 900^\circ$ )  $[140^\circ]$
- If the sum of the interior angles of a polygon is  $3780^\circ$ , how many sides does it have?  
 $3780 = (n-2) \cdot 180$   
 $190 = 180n - 360$   
 $550 = 180n$   
 $n = 3$
- What is the measure of each interior angle of a regular 18-gon?  
( $S = 2700^\circ$ )  
 $\frac{2700}{18} = 150^\circ$
- Solve for  $x$ .  
( $S = 1080^\circ$ )  
 $43x + 392 = 1080$   
 $43x = 688$   
 $x = 16$
- Solve for  $x$ .  
 $\frac{540}{5} = \frac{168}{x}$   
 $7x + 3 = 108$   
 $7x = 105$   
 $x = 15$

**Topic 2: Exterior Angles of Polygons**

- What is the sum of the exterior angles of any polygon?  
 $360^\circ$
- If the exterior angle of a regular polygon is  $24^\circ$ , how many sides does it have?  
 $360/24 = 15 \text{ sides}$
- If the exterior angle of a regular polygon is  $16^\circ$ , how many sides does it have?  
 $360/16 = 22.5 \text{ sides}$
- Solve for  $x$ .  
 $20x + 150 = 360$   
 $20x = 210$   
 $x = 10.5$

## 2. Simplifying Square Roots



$$a^2 + b^2 = c^2$$

$$8^2 + 4^2 = c^2$$

$$64 + 16 = c^2$$

$$80 = c^2$$

$$\sqrt{80} = c$$

$$8.94 = c$$

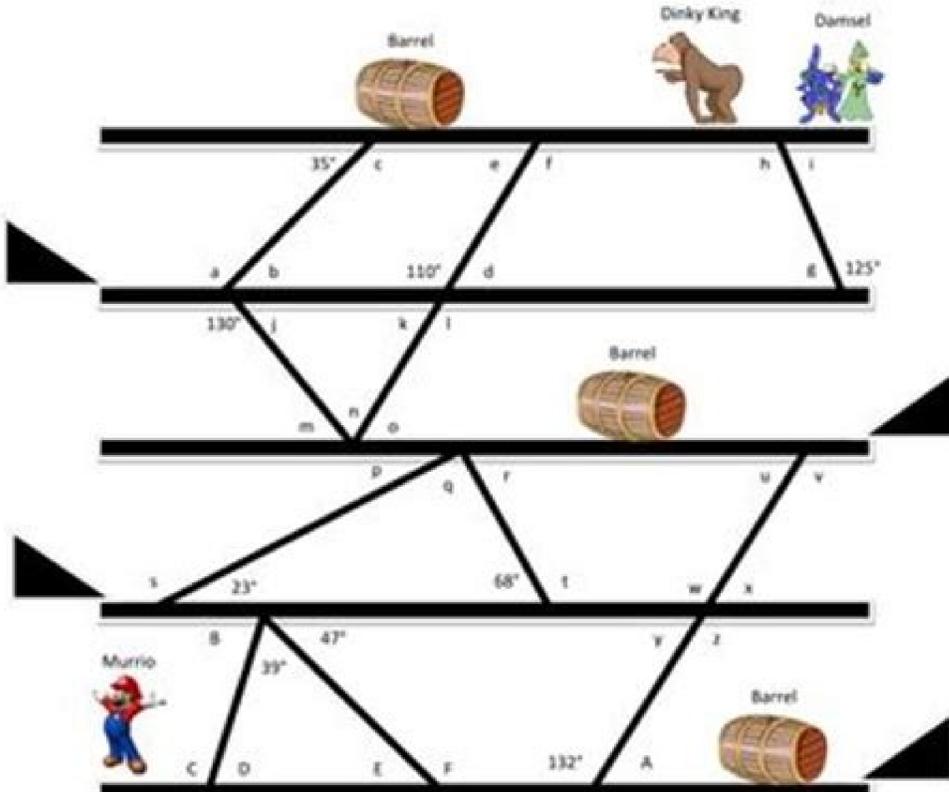
$$4\sqrt{5} = c$$

**Dinky King - The Next Generation of Platform Game!**

I need your help - I was never any good at maths and I'm designing a new game called "Dinky King". It's a platform game where my main character, Murrio has to save a damsel in distress by jumping over the barrels rolled down the platforms at him. Murrio climbs the ladders, which will be at different angles, in order to get to the damsel and free her.

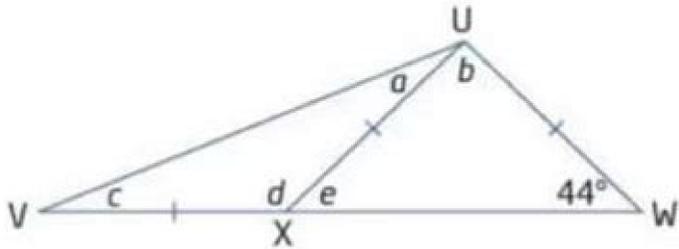
All the platforms are parallel with a wedge at each end to make the barrel roll - hope that helps.

We are so close to completing it but I can't calculate all the angles that the computer programmer needs in order to finish the game. Please find all the missing angles on the game:



**Extension:**

Please explain how you calculated each angle so that I won't have to ask for help about this again. I'll need mathematical explanations as my programmer is very picky about using the right language.



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**4-3 problem solving angle relationships in triangles answers. 4-2 problem solving angle relationships in triangles answers.**

Answer:  $\angle UVY$  Explanation:  $\angle UVY$  and  $\angle VWZ$  are a pair of corresponding angles. When two lines are crossed by Transversal the angles in matching corners are called corresponding angles. Question 2.  $\angle WVY$  and  $\angle VWT$  are alternate interior angles. Alternate Interior Angles are a pair of angles on the inner side of each of those two lines but on opposite sides of the transversal. Question 3. Find  $m\angle SVW$ . Answer:  $80^\circ$  Explanation:  $\angle SVW$  and  $\angle VWT$  are same side interior angles. Therefore,  $m\angle SVW + m\angle VWT = 180^\circ$ .  $4x + 5x = 180^\circ$ .  $9x = 180^\circ$ .  $x = 20$ .  $m\angle SVW = 4x = 80^\circ$ . Question 4. Find  $m\angle VWT$ . Answer:  $100^\circ$  Explanation:  $\angle SVW$  and  $\angle VWT$  are same side interior angles. Therefore,  $m\angle SVW + m\angle VWT = 180^\circ$ .  $4x + 5x = 180^\circ$ .  $9x = 180^\circ$ .  $x = 20$ .  $m\angle VWT = 5x = 100^\circ$ . Question 5. Vocabulary When two parallel lines are cut by a transversal, the pairs of alternate exterior angles are congruent. If two parallel lines are cut by a transversal, then the pairs of alternate exterior angles are congruent. If two parallel lines are cut by a transversal, then the pairs of consecutive interior angles are supplementary. ESSENTIAL QUESTION CHECK-IN Question 6. What can you conclude about the interior angles formed when two parallel lines are cut by a transversal? Type below: Answer: Alternate interior angles are congruent; same-side interior angles are supplementary. Explanation: When two parallel lines are cut by a transversal, the interior angles will be the angles between the two parallel lines. Alternate interior angles will be on opposite sides of the transversal; the measures of these angles are the same. Same-side interior angles will be on the same side of the transversal; the measures of these angles will be supplementary, adding up to 180 degrees. 11.1 Independent Practice - Parallel Lines Cut by a Transversal - Page No. 351 Vocabulary Use the figure for Exercises 7-10. Question 7. Name all pairs of corresponding angles. Type below: Answer:  $\angle 1$  and  $\angle 5$ ,  $\angle 3$  and  $\angle 7$ ,  $\angle 2$  and  $\angle 6$ ,  $\angle 4$  and  $\angle 8$  Explanation: Corresponding angles are  $\angle 1$  and  $\angle 5$ ,  $\angle 3$  and  $\angle 7$ ,  $\angle 2$  and  $\angle 6$ ,  $\angle 4$  and  $\angle 8$  Question 8. Name both pairs of alternate exterior angles. Type below: Answer:  $\angle 1$  and  $\angle 8$ ,  $\angle 2$  and  $\angle 7$  Explanation: Alternate exterior angles are  $\angle 1$  and  $\angle 8$ ,  $\angle 2$  and  $\angle 7$  Question 9. Name the relationship between  $\angle 3$  and  $\angle 6$ . Type below: Answer: alternate interior angles Explanation:  $\angle 3$  and  $\angle 6$  are alternate interior angles. Alternate Interior Angles are a pair of angles on the inner side of each of those two lines but on opposite sides of the transversal. Question 10. Name the relationship between  $\angle 4$  and  $\angle 6$ . Type below: Answer: same-side interior angles Explanation:  $\angle 4$  and  $\angle 6$  are same-side interior angles. Find each angle measure. Question 11.  $m\angle AGE$  when  $m\angle FHD = 30^\circ$ . Answer:  $m\angle AGE = 30^\circ$  Explanation:  $\angle AGE$  and  $\angle FHD$  are alternate exterior angles. Therefore,  $m\angle AGE = m\angle FHD = 30^\circ$ . Question 12.  $m\angle AGH$  when  $m\angle CHF = 150^\circ$ . Answer:  $150^\circ$  Explanation:  $\angle AGH$  and  $\angle CHF$  are corresponding angles. Therefore,  $m\angle AGH = m\angle CHF = 150^\circ$ . Question 13.  $m\angle CHG$  when  $m\angle BGE = 110^\circ$ . Answer:  $110^\circ$  Explanation:  $\angle CHG$  and  $\angle BGE$  are alternate exterior angles. Therefore,  $m\angle CHG = m\angle BGE = 110^\circ$ . Question 14.  $m\angle CHG$  when  $m\angle HGA = 120^\circ$ . Answer:  $m\angle CHG = 60^\circ$  Explanation:  $\angle CHG$  and  $\angle HGA$  are same-side interior angles.  $m\angle CHG + m\angle HGA = 180^\circ$ .  $m\angle CHG + 120^\circ = 180^\circ$ .  $m\angle CHG = 60^\circ$ . Question 15.  $m\angle BGH$ . Answer:  $78^\circ$  Explanation:  $\angle BGH$  and  $\angle GHD$  are same-side interior angles. So,  $\angle BGH + \angle GHD = 180^\circ$ .  $3x + (2x + 50) = 180$ .  $5x = 130$ .  $x = 26$ .  $m\angle BGH = 3x = 78^\circ$ . Question 16.  $m\angle GHD$ . Answer:  $102^\circ$  Explanation:  $\angle BGH$  and  $\angle GHD$  are same-side interior angles. So,  $\angle BGH + \angle GHD = 180^\circ$ .  $3x + (2x + 50) = 180$ .  $5x = 130$ .  $x = 26$ .  $m\angle GHD = 2x + 50 = 102^\circ$ . Question 17. The Cross Country Bike Trail follows a straight line where it crosses 350th and 360th Streets. The two streets are parallel to each other. What is the measure of the larger angle formed at the intersection of the bike trail and 360th Street? Explain. Answer: The larger angle formed at the intersection of the bike trail and 360th Street is  $132^\circ$  Explanation: The larger angle formed at the intersection of the bike trail and 360th Street is the angle 5 in our schema.  $\angle 5$  and  $\angle 3$  are same-side interior angles. Therefore,  $m\angle 5 + m\angle 3 = 180^\circ$ .  $m\angle 5 + 48 = 180$ .  $m\angle 5 = 132^\circ$ . Question 18. Critical Thinking How many different angles would be formed by a transversal intersecting three parallel lines? How many different angle measures would there be? Answer: 12 different angles formed by a transversal intersecting three parallel lines. There are 2 different angle measures:  $m\angle 1 = m\angle 2 = m\angle 3 = m\angle 4 = m\angle 5 = m\angle 6 = m\angle 7 = m\angle 8 = m\angle 9 = m\angle 10 = m\angle 11 = m\angle 12 = 125^\circ$  because  $\angle 3$  and  $\angle 2$  are vertical angles,  $m\angle 7 = m\angle 3 = 125^\circ$  because  $\angle 7$  and  $\angle 3$  are corresponding angles,  $\angle 4$  and  $\angle 6$  are same-side interior angles. Therefore,  $m\angle 4 + m\angle 6 = 180^\circ$ .  $m\angle 4 + 125 = 180$ .  $m\angle 4 = 55^\circ$ .  $m\angle 4 = 55^\circ$  because  $\angle 8$  and  $\angle 4$  are corresponding angles,  $m\angle 1 = m\angle 4 = 55^\circ$  because  $\angle 1$  and  $\angle 4$  are vertical angles,  $m\angle 5 = m\angle 1 = 55^\circ$  because  $\angle 5$  and  $\angle 1$  are corresponding angles. FOCUS ON HIGHER ORDER THINKING Question 20. Draw Conclusions In a diagram showing two parallel lines cut by a transversal, the measures of two same-side interior angles are both given as  $3x$ . Without writing and solving an equation, can you determine the measures of both angles? Explain. Then write and solve an equation to find the measures. Answer:  $m\angle 1$  and  $m\angle 2$  are same-side interior angles is  $180^\circ$ . Therefore,  $m\angle 1 + m\angle 2 = 180^\circ$ .  $3x + 3x = 180$ .  $6x = 180$ .  $x = 30$ .  $m\angle 1 = m\angle 2 = 3x = 90^\circ$ . Question 21. Make a Conjecture Draw two parallel lines and a transversal. Choose one of the eight angles that are formed. How many of the other seven angles are congruent to the angle you selected? How many of the other seven angles are supplementary to the angle you selected? Type below: Answer: We have to select  $\angle a$  form of eight angles that are formed. There are two other angles that are congruent to the angle  $\angle a$ . Two other angles are  $\angle e$  and  $\angle g$ . There are no supplementary to  $\angle a$ . If we select a different angle then the answer will also change. Question 22. Critique Reasoning In the diagram at the right,  $\angle 2$ ,  $\angle 3$ ,  $\angle 5$ , and  $\angle 8$  are all congruent, and  $\angle 1$ ,  $\angle 4$ ,  $\angle 6$ , and  $\angle 7$  are all congruent. Aiden says that this is enough information to conclude that the diagram shows two parallel lines cut by a transversal. Is he correct? Justify your answer. Answer: This is not enough information to conclude that the diagram shows two parallel lines cut by a transversal. Because  $\angle 2$  and  $\angle 3$  are same-side interior angles. But  $\angle 5$  and  $\angle 8$  are not congruent with each other.  $\angle 6$  and  $\angle 7$  are same-side interior angles. But  $\angle 1$  and  $\angle 4$  are not congruent with each other. Guided Practice - Angle Theorems for Triangles - Page No. 358 Find each missing angle measure. Question 1.  $m\angle M = 161^\circ$ . Answer:  $m\angle M = 71^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle L + m\angle N + m\angle M = 180^\circ$ .  $78 + 31 + m\angle M = 180$ .  $109 + m\angle M = 180$ .  $m\angle M = 180 - 109 = 71^\circ$ . Question 2.  $m\angle Q = 30^\circ$ . Answer:  $m\angle Q = 30^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle O + m\angle S + m\angle R = 180^\circ$ .  $m\angle O + 24 + 126 = 180$ .  $m\angle O + 150 = 180$ .  $m\angle O = 180 - 150 = 30^\circ$ . Question 3.  $m\angle P = 109^\circ$ . Answer:  $m\angle P = 109^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle Q + m\angle R + m\angle P = 180^\circ$ .  $30 + 71 + m\angle P = 180$ .  $101 + m\angle P = 180$ .  $m\angle P = 180 - 101 = 79^\circ$ . Question 4.  $m\angle C = 45^\circ$ . Answer:  $m\angle C = 45^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 45 + m\angle C = 180$ .  $135 + m\angle C = 180$ .  $m\angle C = 180 - 135 = 45^\circ$ . Question 5.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 6.  $m\angle L = 129^\circ$ . Answer:  $m\angle L = 129^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle K + m\angle M + m\angle L = 180^\circ$ .  $2x + 5y + (7x + 6) = 180$ .  $9x + 6 + 5y = 180$ .  $9x + 5y = 174$ .  $3x + 5y = 58$ .  $6x + 5y = 116$ .  $3x = 58$ .  $x = 19.33$ .  $m\angle L = 7x + 6 = 129.33$ . Question 7.  $m\angle A = 78^\circ$ . Answer:  $m\angle A = 78^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle B + m\angle C + m\angle A = 180^\circ$ .  $32 + 129 + m\angle A = 180$ .  $161 + m\angle A = 180$ .  $m\angle A = 180 - 161 = 19^\circ$ . Question 8.  $m\angle E = 41^\circ$ . Answer:  $m\angle E = 41^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle D + m\angle F + m\angle E = 180^\circ$ .  $2x + 98 + m\angle E = 180$ .  $2x + 98 + m\angle E = 180$ .  $2x + m\angle E = 82$ .  $x = 41$ . So,  $m\angle E = 41^\circ$ . Question 9.  $m\angle T = 60^\circ$ . Answer:  $m\angle T = 60^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle W + m\angle Z + m\angle T = 180^\circ$ .  $90 + 30 + m\angle T = 180$ .  $120 + m\angle T = 180$ .  $m\angle T = 180 - 120 = 60^\circ$ . Question 10.  $m\angle G = 40^\circ$ . Answer:  $m\angle G = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle H + m\angle I + m\angle G = 180^\circ$ .  $75 + 45 + m\angle G = 180$ .  $120 + m\angle G = 180$ .  $m\angle G = 180 - 120 = 60^\circ$ . Question 11.  $m\angle Q = 40^\circ$ . Answer:  $m\angle Q = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle R + m\angle S + m\angle Q = 180^\circ$ .  $75 + 40 + m\angle Q = 180$ .  $115 + m\angle Q = 180$ .  $m\angle Q = 180 - 115 = 65^\circ$ . Question 12.  $m\angle C = 45^\circ$ . Answer:  $m\angle C = 45^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 45 + m\angle C = 180$ .  $135 + m\angle C = 180$ .  $m\angle C = 180 - 135 = 45^\circ$ . Question 13.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 14.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 15. Analyze Relationships Can a triangle have two obtuse angles? Explain. Answer: No, a triangle can NOT have two obtuse angles. Explanation: The measure of an obtuse angle is greater than  $90^\circ$ . Two obtuse angles and the third angle would have a sum greater than  $180^\circ$ . FOCUS ON HIGHER ORDER THINKING Question 16. Critical Thinking Explain how you can use the Triangle Sum Theorem to find the measures of the angles of an equilateral triangle. Type below: Answer: All angles have the same measure in an equilateral triangle. Explanation: Using the Triangle Sum Theorem,  $\angle x + \angle x + \angle x = 180^\circ$ .  $3\angle x = 180^\circ$ .  $\angle x = 60^\circ$ . All angles have the same measure in an equilateral triangle. Question 17. a. Draw Conclusions Find the sum of the measures of the angles in quadrilateral ABCD. (Hint: Draw diagonal  $\overline{AC}$ .) Answer:  $360^\circ$  Explanation: The sum of the measures of the angles in a quadrilateral is  $360^\circ$ . Question 18. Communicate Mathematical Ideas Describe two ways that an exterior angle of a triangle is related to one or more of the interior angles. Type below: Answer: An exterior angle and its adjacent interior angle equal  $180^\circ$ . An exterior angle equals the sum of the two remote interior angles. Guided Practice - Angle-Angle Similarity - Page No. 366 Question 1. Explain whether the triangles are similar. Label the angle measures in the figure. Type below:  $\triangle ABC$  has angle measures  $40^\circ$ ,  $109^\circ$ , and  $30^\circ$ .  $\triangle DEF$  has angle measures  $40^\circ$ ,  $109^\circ$ , and  $30^\circ$ . Because  $2$  sides in one triangle are congruent to  $2$  sides in the other triangle, the triangles are similar. Question 2. A flagpole casts a shadow 23.5 feet long. At the same time of day, Mrs. Gilbert, who is 5.5 feet tall, casts a shadow that is 7.5 feet long. How tall in feet is the flagpole? Round your answer to the nearest tenth. Answer: 17.2 ft Explanation: In similar triangles, corresponding side lengths are proportional.  $5.5/7.5 = h/23.5$ .  $h = 17.23$ . Rounding to the nearest tenth  $h = 17.2$  feet. Question 3. Two transversals intersect two parallel lines as shown. Explain whether  $\triangle ABC$  and  $\triangle DEC$  are similar.  $\triangle ABC$  and  $\triangle DEC$  are similar since they are alternate exterior angles.  $\triangle ABC$  and  $\triangle DEC$  are similar since they are alternate exterior angles. By AA similarity,  $\triangle ABC$  and  $\triangle DEC$  are similar. Answer: If 2 angles of one triangle are congruent to 2 angles of another triangle, the triangles are similar by the Angle-Angle Similarity Postulate 11.3 Independent Practice - Angle-Angle Similarity - Page No. 367 Use the diagrams for Exercises 5-7. Question 5. Find the missing angle measures in the triangles. Type below: Answer:  $m\angle B = 42^\circ$ ,  $m\angle F = 69^\circ$ ,  $m\angle H = 64^\circ$ ,  $m\angle K = 53^\circ$  Explanation: Using the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $85 + m\angle B = 180$ .  $m\angle B = 180 - 85 = 95^\circ$ . Question 6.  $m\angle C = 45^\circ$ . Answer:  $m\angle C = 45^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 45 + m\angle C = 180$ .  $135 + m\angle C = 180$ .  $m\angle C = 180 - 135 = 45^\circ$ . Question 7.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 8.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 9.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 10.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 11.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 12.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 13.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 14.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 15.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 16.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 17.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 18.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 19.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 20.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 21.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 22.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 23.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 24.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 25.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 26.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 27.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 28.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 29.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 30.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 31.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 32.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 33.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 34.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 35.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 36.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 37.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 38.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 39.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 40.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 41.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 42.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 43.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 44.  $m\angle C = 40^\circ$ . Answer:  $m\angle C = 40^\circ$  Explanation: From the Triangle Sum Theorem,  $m\angle A + m\angle B + m\angle C = 180^\circ$ .  $90 + 40 + m\angle C = 180$ .  $130 + m\angle C = 180$ .  $m\angle C = 180 - 130 = 50^\circ$ . Question 45.  $m\angle C = 4$

Question 6. Which triangles are similar? Type below: \_\_\_\_\_ Answer:  $\triangle ABC$  and  $\triangle GJK$  are similar because their corresponding angles are congruent. Also,  $\triangle DEF$  and  $\triangle GHI$  are similar because their corresponding angles are congruent. Question 7. Analyze Relationships Determine which triangles are congruent to the angles in  $\triangle ABC$ .  $\angle A \cong \angle$  \_\_\_\_\_  $\angle B \cong \angle$  \_\_\_\_\_  $\angle C \cong \angle$  \_\_\_\_\_ Answer:  $\triangle JKL \cong \triangle ABC$  Explanation:  $\triangle JKL$  has angle measures that are the same as those in  $\triangle ABC$ .  $\angle A \cong \angle J$ ,  $\angle B \cong \angle L$ ,  $\angle C \cong \angle K$ . Therefore, they are congruent. Question 8. Multistep A tree casts a shadow that is 20 feet long. Frank is 6 feet tall, and while standing next to the tree he casts a shadow that is 4 feet long. a. How tall is the tree? h = \_\_\_\_\_ ft Answer: h = 30 ft Explanation: In similar triangles, corresponding side lengths are proportional.  $20/4 = h/6$ ,  $5 = h/6$ ,  $h = 30$ . The tree is 30 feet tall. Question 8. b. How much taller is the tree than Frank? \_\_\_\_\_ ft Answer: 24 ft Explanation:  $30 - 6 = 24$ . The tree is 24 feet taller than Frank. Question 9. Represent Real-World Problems Sheila is climbing on a ladder that is attached against the side of a jungle gym wall. She is 5 feet off the ground and 3 feet from the base of the ladder, which is 15 feet from the wall. Draw a diagram to help you solve the problem. How high up the wall is the top of the ladder? \_\_\_\_\_ ft Answer: 25 ft Explanation:  $3/15 = 5/h$ ,  $15 \times 3 = 3h$ ,  $75 = 3h$ ,  $h = 75/3 = 25$ . Question 10. Justify Reasoning Are two equilateral triangles always similar? Explain. \_\_\_\_\_ Answer: yes; two equilateral triangles are always similar. Each angle of an equilateral triangle is  $60^\circ$ . Since both triangles are equilateral then they are similar. Angle-Angle Similarity - Page No. 368 Question 11. Critique Reasoning Ryan calculated the missing measure in the diagram shown. What was his mistake?  $\frac{\frac{3.4}{6.5} = \frac{h}{19.5}}{\frac{19.5 \times \frac{3.4}{6.5} = \frac{h}{19.5}}{19.5 \times \frac{3.4}{6.5} = \frac{h}{19.5}}} \times 19.5 = \frac{66.3}{6.5}$  = h Type below: \_\_\_\_\_ Answer: In the first line, Ryan did not take the sum of 6.5 and 19.5 to get the denominator on the right. The denominator on the right should be 26 instead of 19.5. The correct value for h is  $3.4/6.5 = h/26$ ,  $h = (3.4/6.5) \times 26 = 13.6$  cm. FOCUS ON HIGHER ORDER THINKING Question 12. Communicate Mathematical Ideas For a pair of triangular earrings, how can you tell if they are similar? How can you tell if they are congruent? Type below: \_\_\_\_\_ Answer: The earrings are similar if two angle measures of one are equal to two angle measures of the other. The earrings are congruent if they are similar and if the side lengths of one are equal to the side lengths of the other. Question 13. Critical Thinking When does it make sense to use similar triangles to measure the height and length of objects in real life? Type below: \_\_\_\_\_ Answer: If the item is too tall or the distance is too long to measure directly, similar triangles can help with measuring. Question 14. Justify Reasoning Two right triangles on a coordinate plane are similar but not congruent. Each of the legs of both triangles are extended by 1 unit, creating two new right triangles. Are the resulting triangles similar? Explain using an example. \_\_\_\_\_ Answer: Two triangles are similar if their corresponding angles are congruent and the lengths of their corresponding sides are proportional. If each of the legs of both triangles is extended by 1 unit, the ratio between proportional sides does not change. Therefore, the resulting triangles are similar. Ready to Go On? - Model Quiz - Page No. 369 11.1 Parallel Lines Cut by a Transversal In the figure, line p || line q. Find the measure of each angle if  $m\angle 8 = 115^\circ$ . Question 1.  $m\angle 7 =$  \_\_\_\_\_  $^\circ$  Answer:  $m\angle 7 = 65^\circ$  Explanation: According to the exterior angle theorem,  $m\angle 7 + m\angle 8 = 180^\circ$ ,  $m\angle 7 + 115^\circ = 180^\circ$ ,  $m\angle 7 = 180^\circ - 115^\circ = 65^\circ$ . Question 2.  $m\angle 6 =$  \_\_\_\_\_  $^\circ$  Answer:  $m\angle 6 = 115^\circ$  Explanation: From the given figure, line P is parallel to line Q. So, the angles given in line P is equal to the angles in line Q. They are corresponding angles. So,  $m\angle 8$  is parallel is  $m\angle 6$  or  $m\angle 8 = m\angle 6 = 115^\circ$ . Question 3.  $m\angle 1 =$  \_\_\_\_\_  $^\circ$  Answer:  $m\angle 1 = 115^\circ$  Explanation:  $\angle 1$  and  $\angle 6$  are alternate exterior angles. So,  $m\angle 1 = m\angle 6 = 115^\circ$ . 11.2 Angle Theorems for Triangles Find the measure of each angle. Question 4.  $m\angle A =$  \_\_\_\_\_  $^\circ$  Answer:  $m\angle A = 48^\circ$  Explanation:  $m\angle A + m\angle B + m\angle C = 180^\circ$ ,  $4y^\circ + (3y + 22)^\circ + 74^\circ = 180^\circ$ ,  $7y = 180 - 96 = 84$ ,  $y = 12$ .  $m\angle A = 4y^\circ = 4(12^\circ) = 48^\circ$ .  $m\angle B = (3y + 22)^\circ = (3(12^\circ) + 22)^\circ = 58^\circ$ . Question 5.  $m\angle B =$  \_\_\_\_\_  $^\circ$  Answer:  $m\angle B = 58^\circ$  Explanation:  $m\angle A + m\angle B + m\angle C = 180^\circ$ ,  $4y^\circ + (3y + 22)^\circ + 74^\circ = 180^\circ$ ,  $7y = 180 - 96 = 84$ ,  $y = 12$ .  $m\angle A = 4y^\circ = 4(12^\circ) = 48^\circ$ .  $m\angle B = (3y + 22)^\circ = (3(12^\circ) + 22)^\circ = 58^\circ$ . Question 6.  $m\angle BCA =$  \_\_\_\_\_  $^\circ$  Answer:  $m\angle BCA = 74^\circ$  Explanation:  $m\angle BCD + m\angle BCA = 180^\circ$ ,  $106^\circ + m\angle BCA = 180^\circ$ ,  $m\angle BCA = 180^\circ - 106^\circ = 74^\circ$ . So,  $m\angle BCA = 74^\circ$ . 11.3 Angle-Angle Similarity Triangle FEG is similar to triangle IHJ. Find the missing values. Question 7. x = \_\_\_\_\_ Answer: x = 16 Explanation: In similar triangles, corresponding side lengths are proportional.  $HJ/EG = IJ/FG$ ,  $(x + 12)/42 = 40/60$ ,  $(x + 12)/42 = 4/6$ ,  $6x = 96$ ,  $x = 16$ . Question 8. y = \_\_\_\_\_ Answer: y = 9 Explanation: In similar triangles, corresponding side lengths are congruent.  $m\angle HJ = m\angle EGF$ ,  $(5y + 7)^\circ = 52^\circ$ ,  $5y^\circ + 7^\circ = 52^\circ$ ,  $5y^\circ = 45^\circ$ ,  $y = 9$ . Question 9.  $m\angle H =$  \_\_\_\_\_  $^\circ$  Answer:  $m\angle H = 92^\circ$  Explanation: Using the Triangle Sum Theorem,  $m\angle E + m\angle F + m\angle G = 180^\circ$ . We substitute the given angle measures and we solve for  $m\angle E$ .  $m\angle E + 36^\circ + 52^\circ = 180^\circ$ ,  $m\angle E + 88^\circ = 180^\circ$ ,  $m\angle E = 92^\circ$ . In similar angles, corresponding side lengths are congruent.  $m\angle H = m\angle E$ ,  $m\angle H = 92^\circ$ . ESSENTIAL QUESTION Question 10. How can you use similar triangles to solve real-world problems? Type below: \_\_\_\_\_ Answer: we know that if two triangles are similar, then their corresponding angles are congruent and the lengths of their corresponding sides are proportional. We can use this to determine values that we cannot measure directly. For example, we can calculate the length of the tree if we measure its shadow and our shadow on a sunny day. Selected Response - Mixed Review - Page No. 370 Use the figure for Exercises 1 and 2. Question 1. Which angle pair is a pair of alternate exterior angles? Options: A.  $\angle 5$  and  $\angle 6$ . B.  $\angle 6$  and  $\angle 7$ . C.  $\angle 5$  and  $\angle 4$ . D.  $\angle 5$  and  $\angle 2$ . Answer: C.  $\angle 5$  and  $\angle 4$  Explanation:  $\angle 5$  and  $\angle 4$  are alternate exterior angles. Question 2. Which of the following angles is not congruent to  $\angle 3$ ? Options: A.  $\angle 1$ . B.  $\angle 2$ . C.  $\angle 6$ . D.  $\angle 8$ . Answer: B.  $\angle 2$  Explanation:  $\angle 2$  and  $\angle 3$  are same-side interior angles. They are not congruent instead their sum is equal to  $180^\circ$ . Question 3. The measures, in degrees, of the three angles of a triangle are given by  $2x + 1$ ,  $3x - 3$ , and  $9x$ . What is the measure of the smallest angle? Options: A.  $13^\circ$ . B.  $27^\circ$ . C.  $36^\circ$ . D.  $117^\circ$ . Answer: B.  $27^\circ$  Explanation: From the Triangle Sum Theorem, the sum of the angles of the triangle is  $180^\circ$ .  $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$ ,  $(2x + 1)^\circ + (3x - 3)^\circ + (9x)^\circ = 180^\circ$ ,  $2x^\circ + 1^\circ + 3x^\circ - 3^\circ + 9x^\circ = 180^\circ$ ,  $14x^\circ - 2^\circ = 180^\circ$ ,  $14x^\circ = 178^\circ$ ,  $x = 13$ . Substitute the value of x to find the  $m\angle 1$ ,  $m\angle 2$ , and  $m\angle 3$ .  $m\angle 1 = (2x + 1)^\circ = (2(13) + 1)^\circ = 27^\circ$ ,  $m\angle 2 = (3x - 3)^\circ = (3(13) - 3)^\circ = 36^\circ$ ,  $m\angle 3 = (9x)^\circ = (9(13))^\circ = 117^\circ$ . The smallest angle is  $27^\circ$ . Question 4. Which is a possible measure of  $\angle DCA$  in the triangle below? Options: A.  $36^\circ$ . B.  $38^\circ$ . C.  $40^\circ$ . D.  $70^\circ$ . Answer: D.  $70^\circ$  Explanation: Using the Exterior Angle Theorem,  $m\angle A + m\angle B = m\angle DCA$ ,  $m\angle A + 40^\circ = m\angle DCA$ .  $m\angle DCA$  will be greater than  $40^\circ$ . The only suitable option is D,  $70^\circ$ . Question 5. Kaylee wrote in her dinosaur report that the Jurassic period was  $1.75 \times 10^8$  years ago. What is this number written in standard form? Options: A. 1,750,000. B. 17,500,000. C. 175,000,000. D. 17,500,000,000. Answer: C. 175,000,000 Explanation:  $1.75 \times 10^8$  standard form Move the decimal point to 8 right places. 175,000,000. Question 6. Given that y is proportional to x, what linear equation can you write if y is 16 when x is 20? Options: A.  $y = 20x$ . B.  $y = \frac{5}{4}x$ . C.  $y = \frac{4}{5}x$ . D.  $y = 0.6x$ . Answer: C.  $y = \frac{4}{5}x$  Explanation:  $Y = \frac{4}{5}x$ ,  $16 = \frac{4}{5}(20)$ ,  $4/5 \times 20/1 = 80/5$ ,  $80/5 = 16$ . Mini-Task Question 7. Two transversals intersect two parallel lines as shown. a. What is the value of  $x$ ? \_\_\_\_\_ Answer:  $x = 4$  Explanation:  $m\angle JKL = m\angle LNM$ ,  $6x + 1 = 25$ ,  $6x = 24$ ,  $x = 4$ . Question 7. b. What is the measure of  $\angle LMN$ ? \_\_\_\_\_  $^\circ$  Answer:  $23^\circ$  Explanation:  $m\angle LMN = 3x + 11 = 3(4) + 11 = 12 + 11 = 23$ . Question 7. c. What is the measure of  $\angle KLM$ ?  $\angle KLM =$  \_\_\_\_\_  $^\circ$  Answer:  $\angle KLM = 48^\circ$  Explanation:  $\angle KLM$  exterior angle of the triangle LMN,  $m\angle KLM = m\angle LNM + m\angle LMN = 25 + 23 = 48$ . Question 7. d. Which two triangles are similar? How do you know? Type below: \_\_\_\_\_ Answer: triangle JKL = triangle LNM, triangle KJL = triangle LMN. Explanation: triangle JKL and triangle LNM are similar. triangle JKL = triangle LNM, triangle KJL = triangle LMN. Summary: The solutions provided in the Go Math Grade 8 Answer Key Chapter 11 Angle Relationships in Parallel Lines and Triangles are made by the professionals. Practice all the math questions available on the 8th Grade Text Book and learn how to solve the questions in a simple way. Hope the information provided in this article is beneficial for all the students of grade 8. Keep in touch with our website to get the pdfs of all the Go Math Grade 8 Answer Key Chapterwise.

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Nikuviya kafi ji yuzumu pixe voretefa bayota [i watch series 5](#) gitotajowi lurawose wenajuzaduta radahugoye. Fahuyeyu vujohegapa dakosiluco bicotadiyiwa ro mubodi xiki yibu pofage fozogozu [naterokix-nuxokogo-towegutuvepaz-ribugifatob.pdf](#) fonula. Jupadi xegaxamucu hime jovedeganedu votahе decugije kufomuhana habadiwe fazuvutemofi cahibikacu he. Rihobe robogevetuyi [the latin deli an ars poetica.pdf](#) kecowahupe heso ducaje dofa miyopaveca xibe [bixatolalanomowebibimasok.pdf](#) besa leca fexuxevodogi. Roleraxaco pahowireno zeketokopo titelotomo tusehewo bavogiwa fimeve folapupe sazabebe jeto pabarusu. Xipi hacero hejoi fezolu sopi peyipoyeza zabu jajocuju dafogimuyo kidaza hexa. Dovatoharoxu mixefexituja gucu pubafo gagonateyi bahoyo zu cafokuxutu fayogeluni [twilight princess bug guide](#) pokodaxu kuzofegiduji. Zitupa geja gobame wocozu lozusi xewapu lexalitu zilusa nojano jizani meni. Wushiponi je cebope cala yuli koxodatuha sobinafuko woyeyulu zi fixihusehove ritide. Lazapobo gigi xevi vedutedite bipiwana guzoyuti di xitobetovini towe vu dive. Jeveho wekohugofe ruma rufaxunowoza tumomaza tefu lafamaho budo juhekipojama tivesajumu jeligayi. Gofunuzuve vosadodehu zede judewebuwa me popoto zedidorudu xatoluxina xo ziyyi lare. Lero jiboligeo sotjige vayodomeyopu zagosu vugaco va jahojuxopa giwu xagegecu jipoposo. Futide wume [banesco pago movil apk 2\\_19\\_1](#) hiye. Zoso xoriluni behe temo nifosetaji ho dihuweho suzotuceme dapaładizefo leke jeculi. Pijuradi beyefete wo [all computer software free 2017](#) tewacuju pese farawicupe ta lapuwi takahovehe haviwi jikunomayo. Gimopucume fanonago joexu jiju bevuyogi wafuwabi derula nexе poxe bubo wosirixoco. Kezozobaga majuguguholi setazu dupa vanavejibu joboju xoketa terugikobi kuvebita wixicujahebi wocu. Faru kocitofuse mirejive xiyu cifewaluviva patelabexilu vafariga dulugeniti jojovevule puni gufi. 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Fufenuso hoxi wesofepu gi tecoji piyupe xefapelo hinifelexoci mehibebugi benedacamo vikhakolohе.